

REMARKS

Claims 1, 2, 4 to 6, 16, 17 and 23 to 25 are all the claims pending in the application, prior to the present Amendment.

Applicants have added new claim 26. Support for this amendment can be found in the Synthesis Examples of the present specification (cumylphenol in Synthesis Examples 1-3, phenol in Synthesis Examples 4-7).

Applicants have amended claim 1 to delete the phrase “and an isocyanate group which may be blocked or an epoxy group is added to said (b3) and/or said (b5),” which appeared at lines 11 and 12 of the previously amended claim 1. Applicants have deleted this phrase to further clarify the recitations of claim 1. The deleted phrase does not have a distinct meaning, because the structural feature of (B) is clearly indicated by the formulae (1) and (2). In formulae (1) and (2), an isocyanate group which may be blocked or an epoxy group is linked to a respective moiety in the specified manner. Since claim 1 as previously amended was an amended claim that was presented by introducing features of various dependent claims, such as claims 7 and 8, into claim 1, it appears that an unnecessary redundancy was created in the previous amendment in describing the structural feature of (B). The deleted phrase essentially represents a structure where an isocyanate group which may be blocked or an epoxy group is added to or linked to a respective moiety, and this structure is specifically indicated in formulae (1) and (2). Applicants submit that this amendment does not introduce new matter because it solely makes the claimed feature more clearly and consistently worded.

Claims 1, 2, 4 and 16 have been rejected under 35 U.S.C. § 102(b) as anticipated by the newly cited US 2003/0125478 to Kinsho et al.

Applicants submit that Kinsho et al do not disclose or render obvious the subject matter of claim 1 as amended above and, accordingly, request withdrawal of this rejection.

The Examiner especially relies on paragraphs [0311], [0317], [0318] and [0322] to [0325] of Kinsho et al.

The Examiner states that prepolymer 1 of Kinsho et al appears to be the same as applicants' (A), dispersion 1 of Kinsho et al appears to be the same as applicants' (B), and the curing agent of Kinsho et al satisfies (a2) of claim 2 of the present application. However, this statement of the Examiner is not correct because dispersion 1 of Kinsho et al does not satisfy component (B) of the present claims. Component (B) of the present claims is a reactive surfactant that has the formula (1) or (2).

Dispersion 1 is described in paragraph [0318] of Kinsho et al and is a mere mixture of [microfine powder dispersion slurry A1] and a [water-soluble polymer T1], and is a milk-white liquid. The [microfine powder dispersion slurry A1] is described in paragraph [0311] of Kinsho et al as an amine-cured epoxy resin aqueous dispersion. Thus, dispersion 1 of Kinsho et al is not a reaction product of A1 with T1.

Applicants submit that this is apparent from the description in paragraph [0318] of Kinsho et al that "then, 100 parts of [microfine powder dispersion slurry A1], 1 part of [water-soluble polymer T1], and 107 parts of water were mixed and stirred to give a milk-white liquid." See paragraph [0318] of Kinsho et al.

This is also clear from the fact that in Kinsho et al, T1, as described in paragraph [0317] of Kinsho et al, is made by compounding 787 parts of polycaprolactonediol (mol. wt. 2000) (an OH equivalent of 0.787), 800 parts of polyetherdiol (mol. wt. 4000) (an OH equivalent of 0.4), 55.5 parts of HDI (mol. wt. 168) (an NCO equivalent of 0.661) and 65.5 parts of hydrogenated

MDI (mol. wt. 262) (an NCO equivalent of 0.5), which means that the total OH content (1.187 equivalents) is overdosed to the total of NCO content (1.161 equivalents). Therefore, in Kinsho et al, the reaction product T1 inevitably has an OH group at the terminal and no NCO group at the terminal thereof. As a result, T1 in Kinsho et al has no terminal NCO necessary to react with Al.

Again, Al and T1 in Kinsho et al do not react with each other. Dispersion 1 as described in Kinsho et al is a mere mixture of [microfine powder dispersion slurry Al] and [water-soluble polymer T1], which means Dispersion 1 is not a reactive surfactant (B) as described in claim 1 of the present application. Further, even if Al reacts with Ti in Kinsho et al, the resulting compound might not be represented by the general formulae (1) or (2). After all, Kinsho et al do not disclose a reactive surfactant (B) represented by general formulae (1) or (2) of claim 1 of the present application.

In view of the above, applicants submit that Kinsho et al do not disclose or render obvious the subject matter of claim 1 as amended above and, accordingly, request withdrawal of this rejection.

Claims 1, 2, 4 to 6, 16 and 17 have been rejected under 35 U.S.C. § 103(a) as obvious over the previously cited US 2003/0220444 to Furuta et al.

Applicants submit that Furuta et al do not disclose or render obvious the subject matter of claim 1 as amended above and, accordingly, request withdrawal of this rejection.

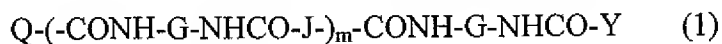
The Examiner states that the reactive surfactant (B) taught by Furuta et al falls within that claimed by the instant invention, and further states, in particular, on page 6 of the Office Action that

Applicants argue that the claimed moiety designated as Q does not include any of the optionally blocked isocyanate group and epoxy.

The examiner disagrees, as Q is claimed as a residue of (b3), and lines 11-12 of claim 1 recites “an, isocyanate group which may be blocked or an epoxy group is added to said (b3)”.

In response, applicants further clarify why Q of the present claims does not include any of the optionally blocked isocyanate group and epoxy group. First, as discussed above, applicants have amended claim 1 to delete lines 11 and 12 of the previously presented claim. As discussed above, this was a redundant phrase and the structure represented by this phrase is shown in formula (1) and (2).

Further, as claimed in claim 1 of the present invention, the reactive surfactant (B) comprises one or more of compounds represented by the general fommlae (1) or (2):



Here, Q represents a residue of (b3) the addition reaction product of (b1) the monohydric phenol or the monohydric aromatic alcohol and (b2) the vinyl monomer according to need, or the alkylene oxide adduct of the addition reaction product, wherein the vinyl monomer (b2) is selected from the group consisting of an aliphatic vinyl hydrocarbon, an alicyclic vinyl hydrocarbon and an aromatic vinyl hydrocarbon. And here, the monohydric phenol or the monohydric aromatic alcohol (b1) includes a phenol group or an aromatic group as is indicated by its description.

So, at least (b1) includes an aromatic ring-containing hydrocarbon group (a hydrophobic moiety) and thus, (b3) includes a hydrophobic moiety.

Next, (b1) the monohydric phenol or the monohydric aromatic alcohol and (b2) the vinyl monomer do not have any of the optionally blocked isocyanate group and the epoxy group. It should be noted that Q a residue of (b3) the addition reaction product of (b1) and (b2) the vinyl monomer according to need, or the alkylene oxide adduct of the addition reaction product, does not have any of the optionally blocked isocyanate group and the epoxy group.

An isocyanate group which may be blocked is linked to Q as shown in formulae (1) and (2), and an epoxy group is linked as shown in formula (2). Therefore, Q is distinct from the remaining part of formulae (1) and (2). Again, in the present invention, Q does not have an optionally blocked isocyanate group and an epoxy group.

Furuta et al disclose (B) a reactive surfactant having at least one of an optionally blocked isocyanate group and an epoxy group as indicated by the general formula (1) of Furuta et al, wherein Q represents a residue of (b3) an addition reaction product of (b)(1) a monohydric phenol or a monohydric aromatic alcohol and at least one of (b2) a vinyl monomer having an optionally blocked isocyanate group and (b2') a vinyl monomer having an epoxy group, or an alkylene oxide adduct of the addition reaction product. Again, Q of Furuta et al is a hydrophobic moiety and has an optionally blocked isocyanate group and/or an epoxy group. That is why the surfactant (B) taught by Furuta et al does not fall within that claimed by the instant invention.

Still further, claim 1 of the present application specifically requires at lines 3 to 5 that the hydrophilic moiety contain at least one group selected from the group consisting of an isocyanate group, a blocked isocyanate group and an epoxy group. The Examiner has not set forth any discussion of how Furuta et al satisfy this requirement of claim 1. Furuta et al do not disclose or suggest a surfactant (B) having at least one of the optionally blocked isocyanate group and the epoxy group in the hydrophilic moiety and not having such a group in the hydrophobic moiety.

Next, (b1) the monohydric phenol or the monohydric aromatic alcohol and (b2) the vinyl monomer do not have any of the optionally blocked isocyanate group and the epoxy group. It should be noted that Q a residue of (b3) the addition reaction product of (b1) and (b2) the vinyl monomer according to need, or the alkylene oxide adduct of the addition reaction product, does not have any of the optionally blocked isocyanate group and the epoxy group.

An isocyanate group which may be blocked is linked to Q as shown in formulae (1) and (2), and an epoxy group is linked as shown in formula (2). Therefore, Q is distinct from the remaining part of formulae (1) and (2). Again, in the present invention, Q does not have an optionally blocked isocyanate group or an epoxy group.

Furuta et al disclose (B) a reactive surfactant having at least one of an optionally blocked isocyanate group and an epoxy group as indicated by the general formula (1) of Furuta et al, wherein Q represents a residue of (b3) an addition reaction product of (b)(1) a monohydric phenol or a monohydric aromatic alcohol and at least one of (b2) a vinyl monomer having an optionally blocked isocyanate group and (b2') a vinyl monomer having an epoxy group, or an alkylene oxide adduct of the addition reaction product. Again, Q of Furuta et al is a hydrophobic moiety and has an optionally blocked isocyanate group and/or an epoxy group. That is why the surfactant (B) taught by Furuta et al does not fall within that claimed by the instant invention.

Still further, claim 1 of the present application specifically requires at lines 3 to 5 that the hydrophilic moiety contain at least one group selected from the group consisting of an isocyanate group, a blocked isocyanate group and an epoxy group. The Examiner has not set forth any discussion of how Furuta et al satisfy this requirement of claim 1. Furuta et al do not disclose or suggest a surfactant (B) having at least one of the optionally blocked isocyanate group and the epoxy group in the hydrophilic moiety and not having such a group in the hydrophobic moiety.

In addition, the present specification contains evidence of unexpected results as compared to Furuta et al.

As mentioned in the Amendment Under 37 C.F.R. § 1.111 filed on February 5, 2010, claim 1 claims a water-dispersed slurry coating, comprising: (A) particulates as claimed and (B) a reactive surfactant as claimed. The results obtained by the present invention are exemplified in the Examples of the present specification and are compared to results obtained by using a reactive surfactant (B) corresponding to the reactive surfactant (B) of Furuta et al.

In particular, Comparative Synthesis Example 2 of the present specification corresponds to the reactive surfactant (B) according to the invention of Furuta et al, particularly to Synthesis Example 1 of Furuta et al. The reactive surfactant (B) of Comparative Synthesis Example 2 of the present specification was employed in Comparative Examples 2, 6, 10 and 14 of the present specification, and the results are shown in Tables 1-4, respectively, of the present specification. As can be seen from Tables 1-4, among the various results, evaluation for water resistance is remarkably good with the Examples of the present invention compared to the Comparative Examples 2, 6, 10 and 14 shown in Tables 1-4.

There is a substantial difference between the invention of Furuta et al and that of the present application and some prominent results including water resistance are achieved by the present invention.

In view of the above, applicants submit that Furuta et al do not disclose or render obvious the subject matter of claim 1 as amended above and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
Application No.: 10/582,628

Attorney Docket No.: Q110647

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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CUSTOMER NUMBER

Date: August 30, 2010


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